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Notes on Some Foliicolous Lichenized Fungi from Taiwan

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ABSTRACT: Only a few foliicolous lichenized fungi have ever been reported from Taiwan. Based on the materials collected in Taipei County, *Dimerella epiphylla* (Muell. Arg.) Malme is found for the first time in Taiwan. This species and other two foliicolous lichenized fungi, *Sporopodium phyllocharis* (Montagne) A. Massalongo and *Trichothelium alboatrum* Vainio are described and illustrated.

KEYWORDS: lichens, lichenized fungi, foliicolous, Taiwan.

INTRODUCTION

Obligately foliicolous lichenized fungi are distributed throughout tropical and subtropical regions, especially in rain forests. Taiwan has also been included in the distribution range of this group of lichenized fungi by Serusiaux (1989). Because there are more than 4000 species and additional infraspecific taxa of vascular plants (Hsieh *et al.*, 1994) in Taiwan which provide different kinds of leaves or leaf-like organs (*e. g.* cladodes) as substrates for foliicolous organisms, many foliicolous lichenized fungi are expected to occur here. However, they did not receive much attention in Taiwan before. Chung (1994) reported *Sporopodium phyllocharis* (Montagne) A. Massalongo and *Trichothelium alboatrum* Vainio as two new additions. In this paper, another foliicolous genus and species, *Dimerella epiphylla* (Muell. Arg.) Malme, is reported as a new record to Taiwan.

MATERIALS AND METHODS

Traditional herbarium methods were used in collecting materials. Cross sections of apothecia were cut freehand with the aid of a stereomicroscope. 2% KOH was applied at first, and squash preparation was examined in Melzer's reagent. The size of spores and algal cells was measured under an oil immersion objective. Voucher specimens are preserved in the Mycology Laboratory, Department of Botany, National Taiwan University, Taipei.

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RESULTS

1. **Dimerella epiphylla** (Muell. Arg.) Malme, Arkiv Bot. 26A: 9.1934. 葉上類蠟盤 Fig. 1

Hypothallus indistinct. Apothecia orange, constricted at the base, less than 0.5 mm in diameter; margin pale flesh-colored (fading in 2%KOH), entire. Excipulum pseudo-parenchymatous; hymenium ca. 50 μm high, pale blue and soon fading to yellow in Melzer's reagent. Apices of paraphyses clavate. Eight spores per ascus; spores fusiform, colorless, 7-9 μm long.

TAIWAN: Taipei County, Wulai, epiphyllous on a species of palm, 29 Mar. 1994, Chung-L2616.

Previously known from Ceylon, Sumatra, Philippines, China (Yunnan), and French Indochina in Asia.

2. **Sporopodium phyllocharis** (Montagne) A. Massalongo, Alcuni Generi di licheni: 9. 1855. 葉生孢足衣 Fig. 2

Thallus ca. 8 mm. in diameter, slightly verrucose, hypothallus not distinct. Apothecia constricted at the base, 0.5-0.8 mm in diameter; margin thin, ca.0.05 mm wide. Excipulum colorless; hypothecium brown. Hymenium colorless, Melzer's reagent positive (blue); epithelium rich in algal cells, 3-5 μm in diameter. One spore per ascus; spores muriform, colorless, 74-95 x 13-15 μm.

TAIWAN: Taipei County, Wulai, partial shade, near a stream, epiphyllous on *Hoya carnosa* (L. f.) R. Br. (Asclepiadaceae), 6 Feb. 1994, Chung-L2702.

Previously known from Ceylon and Java in Asia.

3. **Trichothelium alboatrum** Vainio, Ann. Acad. Sci. Fenn., ser.A, 15: 321. 1921. 白棘星果衣 Fig. 3

Thallus ca. 8 mm in diameter, somewhat dispersed, smooth, hypothallus not distinct. Perithecia sessile, ca.0.1 mm in diameter (not incl.the setae), black; the apical setae white or black with white tips, 0-6. Melzer's reagent negative. Paraphyses simple, ca. 1 μm thick. Eight spores per ascus, some 3-septate and others 7-septate (one spore observed being 4-septate), fusiform, 20-22.5 x 4-5 μm.

TAIWAN: Taipei County, Wulai, partial shade, near a stream, epiphyllous on *Hoya carnosa* (L. f.) R. Br. (Asclepiadaceae), 6 Feb. 1994, Chung-L2607, 2712a.

Previously known from Philippines, Sumatra, and Java in Asia.

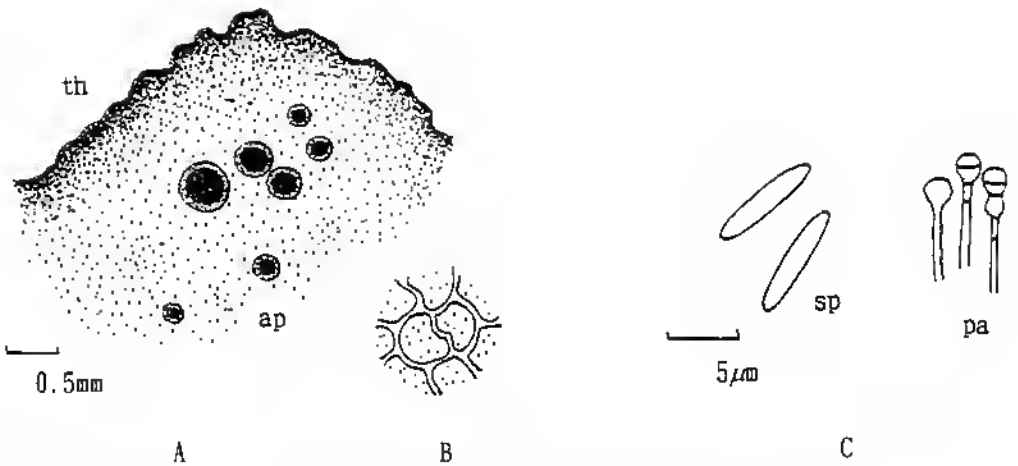

Fig. 1. *Dimerella epiphylla* (Muell. Arg.) Malme A: apothecia (ap) and part of thallus (th); B: symbiotic algae; C: spores (sp) and clavate tips of paraphyses (pa).

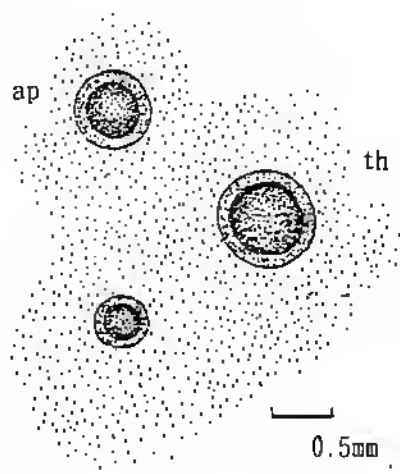

Fig. 2. *Sporopodium phyllocharis* (Montagne) A. Massalongo apothecia (ap) and part of thallus (th).

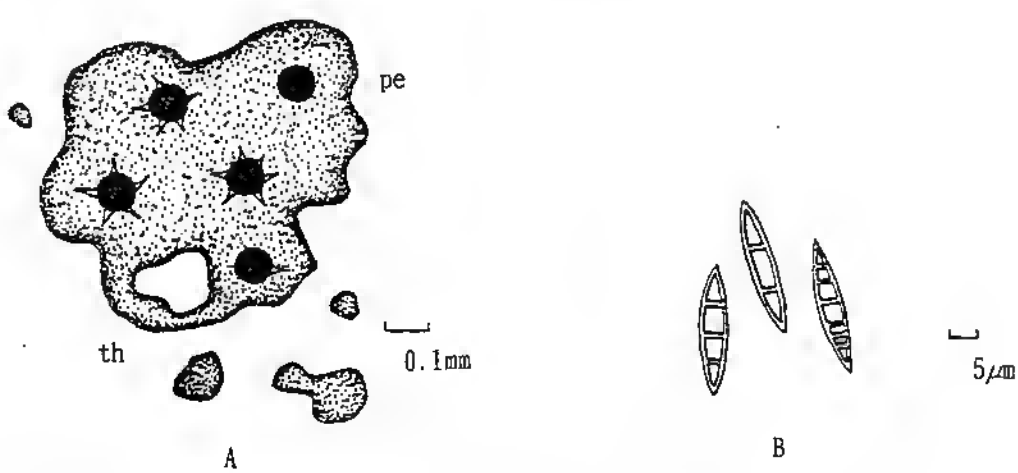

Fig. 3. *Trichothelium alboatrum* Vainio A: perithcia (pe) and part of thallus (th); B: spores.

DISCUSSION

Farkas and Sipman (1993) listed the above three species as occurring in "all tropics". The discovery of them in Taiwan provides further information about their distribution in eastern Asia. On the other hand, since Wei (1991) did not list the latter two species in his enumeration, their Chinese names are proposed here for the first time.

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LITERATURE CITED

Chung, C. H. 1994. Notes on some foliicolous lichenized fungi from Taiwan. Fifth International Mycological Congress, August 14-21, 1994, Vancouver, British Columbia, Canada, Abstracts: 38.

Farkas, E. E. and H. J. M. Sipman. 1993. Bibliography and checklist of foliicolous lichenized fungi up to 1992. Tropical Bryology **7:** 93-148.

Hsieh, C. F., C. F. Shen and K. C. Yang. 1994. Introduction to the flora of Taiwan, **3:** floristics, phytogeography, and vegetation. In: Flora of Taiwan Second Edition, vol.1. Editorial Committee of the Flora of Taiwan, Taipei. pp.7-16.

Serusiaux, E. 1989. Foliicolous lichens: Ecological and chorological data. Bot. J. Linn. Soc.**100:** 87-96.

Wei, J. C. 1991. An Enumeration of Lichens in China. International Academic Publishers, Beijing. 278pp.

臺灣葉生地衣化眞菌記要

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摘　　要

在臺灣, 曾報導過的葉生地衣化眞菌種類並不多。根據採自臺北縣的標本, 我在臺灣首次發現了 *Dimerella epiphylla* (Muell. Arg.) Malme。本文對它和另兩種葉生地衣化眞菌 *Sporopodium phyllocharis* (Montagne) A. Massalongo 和 *Trichothelium alboatrum* Vainio 作了描述及圖示。

關鍵字: 地衣, 地衣化眞菌, 葉生, 臺灣。

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